

The CBHSQ Report

Short Report

January 03, 2013*

TRENDS IN ADOLESCENT SUBSTANCE USE AND PERCEPTION OF RISK FROM SUBSTANCE USE

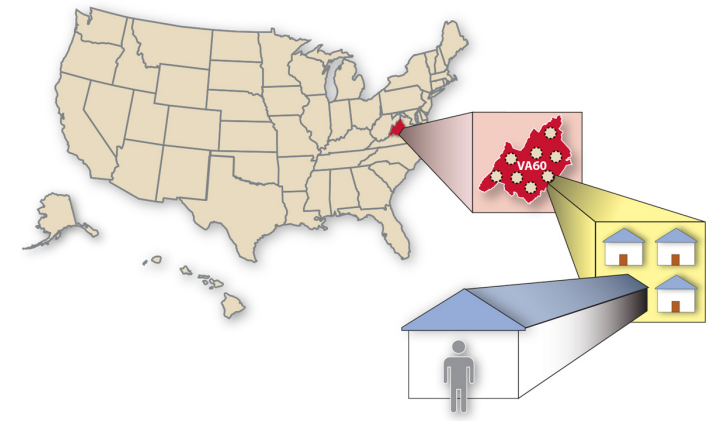
AUTHORS

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INTRODUCTION

An adolescent's perception of the risks associated with substance use is an important determinant of whether he or she engages in substance use. For example, youths who perceive high risk of harm are less likely to use drugs than youths who perceive low risk of harm.¹ Thus, providing adolescents with credible, accurate, and age-appropriate information about the harm associated with substance use is a key component in prevention programming.² Expanding upon research that shows the predictive nature of risk perceptions to subsequent substance use among adolescents,^{3,4} the National Survey on Drug Use and Health (NSDUH) provides an opportunity to conduct a cross-sectional analysis of the changes over time in the prevalence of substance use and perceptions of risk. Although cross-sectional analysis cannot confirm that increases in substance use are a direct result of decreases in perceptions of risk, this report examines how rates of substance use and perceived risk vary over time and in relation to each other. Understanding the relationship between risk perception and substance use during adolescence may help to better target health promotion messages and increase the effectiveness of prevention and intervention programs.

NSDUH asks adolescents aged 12 to 17 how much people risk physical and other harm when they drink five or more alcoholic drinks once or twice a week, use marijuana once or twice a week, use cocaine once or twice a week, use LSD once or twice a week, and use heroin once or twice a week. Response choices are (1) no risk, (2) slight risk, (3) moderate risk, and (4) great risk. NSDUH also asks adolescents about their substance use in the 30 days before the interview. This issue of *The NSDUH Report* focuses on trends in risk perception and substance use among adolescents aged 12 to 17 between 2002 and 2011.



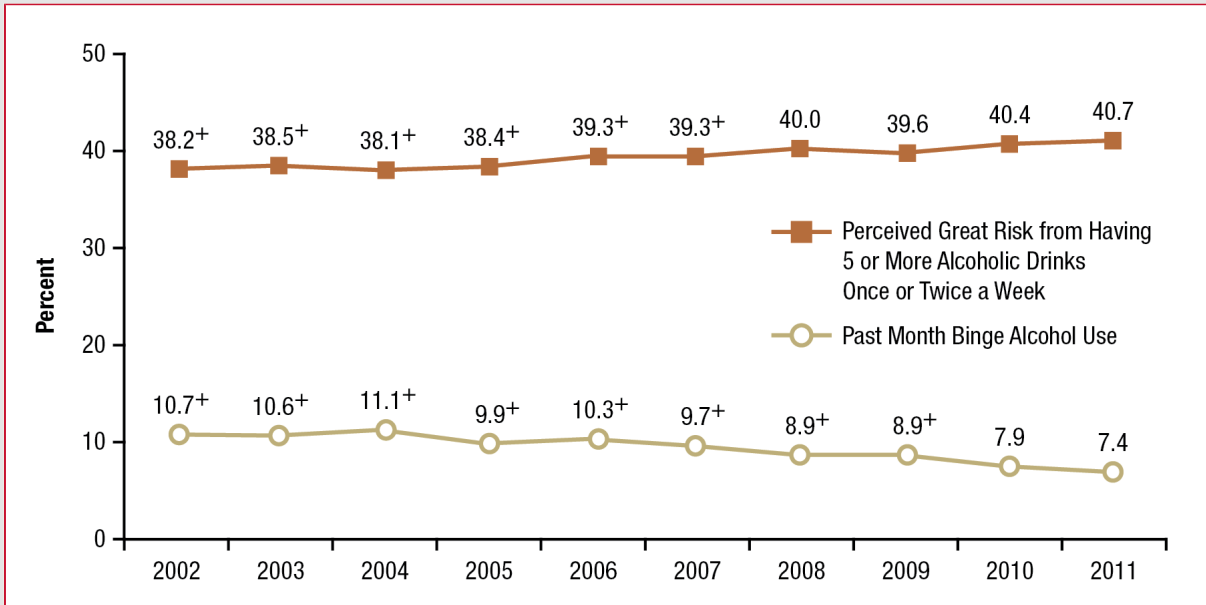
In Brief

- The percentage of adolescents aged 12 to 17 who perceived great risk from having five or more alcoholic drinks once or twice a week increased from 38.2 percent in 2002 to 40.7 percent in 2011; during the same period, the rate of binge alcohol use among adolescents decreased from 10.7 to 7.4 percent
- Between 2007 and 2011, the percentage of adolescents who perceived great risk from smoking marijuana once or twice a week decreased from 54.6 to 44.8 percent, and the rate of past month marijuana use among adolescents increased from 6.7 to 7.9 percent
- In 2011, the percentages of adolescents reporting substance use in the past month were generally lower among those who perceived great risk from using substances than among those who did not perceive great risk

CHANGES IN ALCOHOL USE AND RISK PERCEPTION

The percentage of adolescents who perceived great risk from having five or more drinks of an alcoholic beverage once or twice a week increased from 38.2 percent in 2002 to 40.7 percent in 2011 (Figure 1). Consistent with the increase in perceived risk, adolescents’ binge alcohol use decreased from 10.7 in 2002 to 7.4 percent in 2011.⁵

Figure 1. Trends in Perception of Great Risk from Having Five or More Drinks of Alcohol Once or Twice a Week and Past Month Binge Alcohol Use among Adolescents Aged 12 to 17: 2002 to 2011

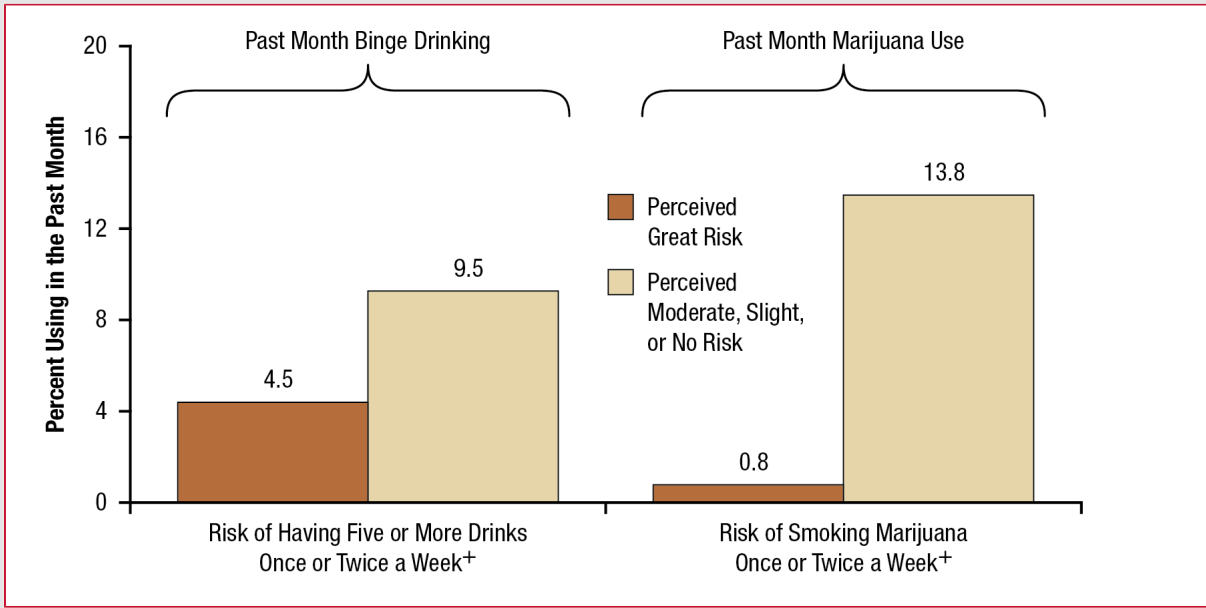


Difference between estimate and estimate for 2011 is statistically significant at the .05 level.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Surveys on Drug Use and Health (NSDUHs), 2002 to 2011 (revised March 2012).

Adolescents who perceived great risk from binge drinking—having five or more drinks of an alcoholic beverage once or twice a week—were less likely than those who did not perceive great risk to report binge alcohol use in the past month (see Supporting Table S1). In 2011, 4.5 percent of adolescents who perceived great risk from binge drinking once or twice a week reported they engaged in past month binge alcohol use, compared with 9.5 percent of those who perceived moderate, slight, or no risk (Figure 2).

Figure 2. Past Month Binge Drinking and Marijuana Use among Adolescents Aged 12 to 17, by Perceptions of Risk: 2011



Difference between those perceiving great risk and those perceiving moderate, slight, or no risk is statistically significant at the .05 level.

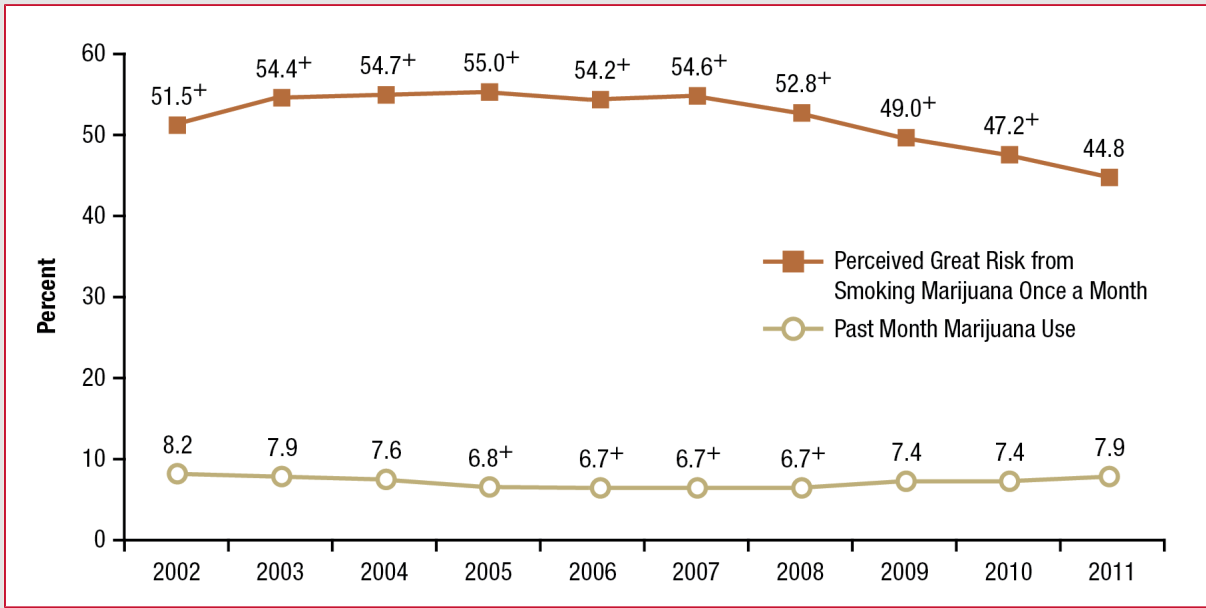
Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Surveys on Drug Use and Health (NSDUHs), 2002 to 2011 (revised March 2012).

CHANGES IN MARIJUANA USE AND RISK PERCEPTION

The percentage of adolescents who perceived great risk of harm from smoking marijuana once or twice a week increased between 2002 and 2003 but remained relatively stable until 2007; the percentage then decreased each year from 54.6 percent in 2007 to 44.8 percent in 2011 (Figure 3). The rate of past month marijuana use among adolescents was relatively stable between 2002 and 2004, and then decreased between 2004 and 2005. The rate of past month marijuana use held steady at about 6.7 percent until 2008; it increased to 7.4 percent in 2009 and 2010 and to 7.9 percent in 2011.

Adolescents who perceived a great risk of harm from smoking marijuana had lower substance use rates than adolescents who did not perceive great risk (see Supporting Table S1). In 2011, past month marijuana use was reported by 0.8 percent of adolescents who saw great risk in smoking marijuana once or twice a week compared with 13.8 percent of those who saw moderate, slight, or no risk (Figure 2).

Figure 3. Trends in Perception of Great Risk from Smoking Marijuana Once or Twice a Week and Past Month Marijuana Use among Adolescents Aged 12 to 17: 2002 to 2011



Difference between estimate and estimate for 2011 is statistically significant at the .05 level.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Surveys on Drug Use and Health (NSDUHs), 2002 to 2011 (revised March 2012).

CHANGES IN COCAINE, LSD, AND HEROIN USE AND RISK PERCEPTION

With roughly 78 percent of adolescents in 2011 perceiving great risk from using cocaine once or twice a week, the percentages have remained stable since 2007 and are down only slightly since 2002 (Table 1). Despite the relatively stable trend in perception of great risk, the rate of past month use of cocaine among adolescents decreased from 0.6 percent in 2002 to 0.3 percent in 2011. The percentage of adolescents who perceived great risk from using LSD once or twice a week decreased from 76.2 percent in 2002 to 71.3 percent in 2010 and 70.4 percent in 2011; however, there was no change in the rate of past month use of LSD among adolescents during this period with roughly 0.1 percent of youths using LSD.

Similarly, the percentage of adolescents who perceived great risk from using heroin once or twice a week decreased from 82.5 percent in 2002 to 80.4 percent in 2010 and 79.7 percent in 2011; however, there was no change in the rate of past month use of heroin among adolescents during this period with up to 0.1 percent of youths using heroin. The association between perceived risk of using cocaine, LSD, and heroin and the use of these substances was not as strong as it was for alcohol and marijuana (see Supporting Table S1).

Table 1. Trends in Perception of Great Risk from Using Selected Substances Once or Twice a Week and Past Month Substance Use among Adolescents Aged 12 to 17: Percentages, 2002 to 2011

Variable	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Perceived Great Risk from Using Cocaine Once or Twice a Week	79.8 ⁺	80.7 ⁺	79.8 ⁺	79.9 ⁺	79.2 ⁺	78.9	79.1	78.4	78.3	78.1
Perceived Great Risk from Using Heroin Once or Twice a Week	82.5 ⁺	82.6 ⁺	81.4 ⁺	81.8 ⁺	81.2 ⁺	81.0 ⁺	81.3 ⁺	80.9 ⁺	80.4	79.7
Perceived Great Risk from Using LSD Once or Twice a Week	76.2 ⁺	76.9 ⁺	76.4 ⁺	76.1 ⁺	74.7 ⁺	74.1 ⁺	73.8 ⁺	71.7 ⁺	71.3	70.4
Past Month Use of Cocaine	0.6 ⁺	0.6 ⁺	0.5 ⁺	0.6 ⁺	0.4 ⁺	0.4 ⁺	0.4	0.3	0.2	0.3
Past Month Use of Heroin	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.1
Past Month Use of LSD	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.1	0.2	0.1

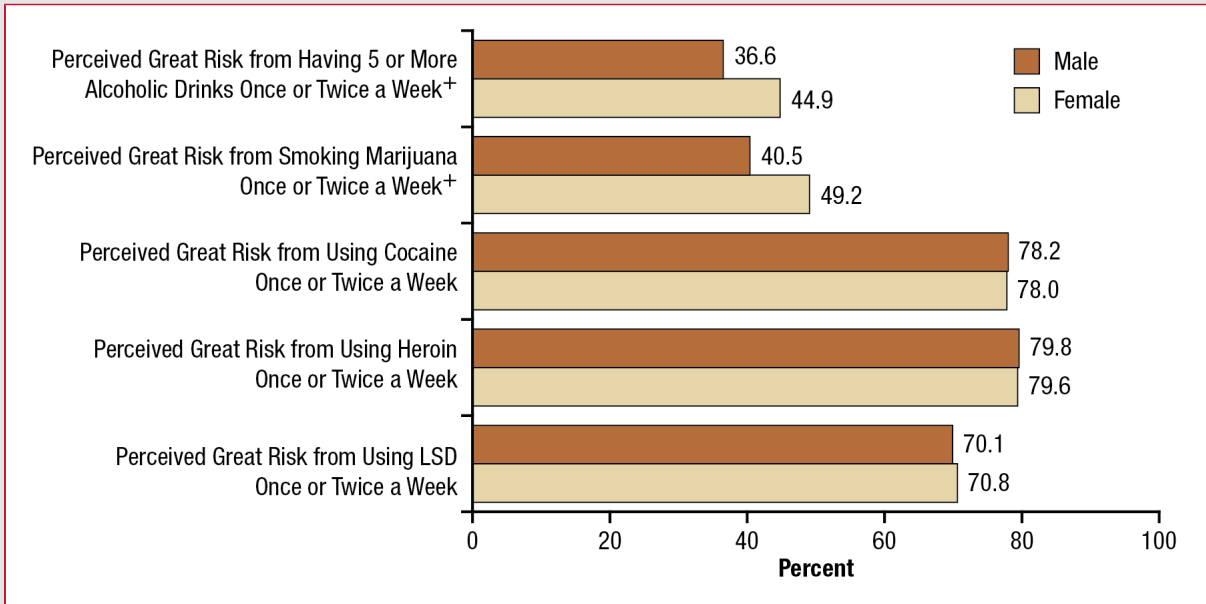
Difference between estimate and estimate for 2011 is statistically significant at the .05 level.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Surveys on Drug Use and Health (NSDUHs), 2002 to 2011 (revised March 2012).

DEMOGRAPHIC DIFFERENCES IN RISK PERCEPTION IN 2011

In 2011, adolescent females were more likely than adolescent males to perceive great risk from having five or more alcoholic drinks once or twice a week (44.9 vs. 36.6 percent) and from smoking marijuana once or twice a week (49.2 vs. 40.5 percent; Figure 4). There were no differences between males and females in perceived risk from using cocaine once or twice a week, using heroin once or twice a week, or using LSD once or twice a week.

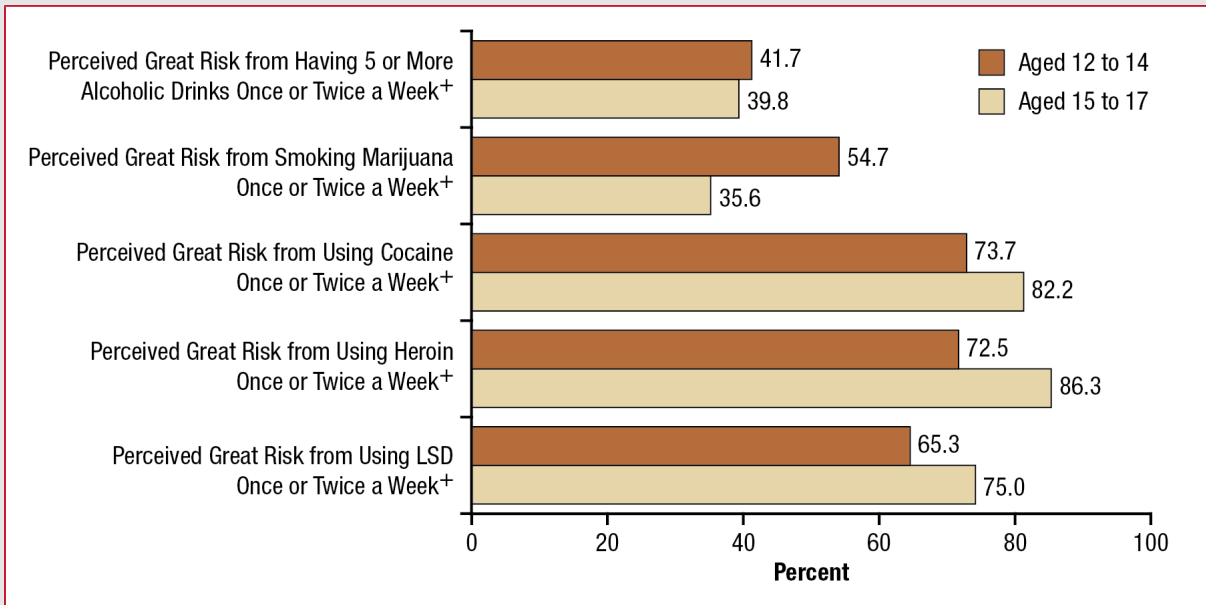
Figure 4. Perception of Great Risk from Using Selected Substances Once or Twice a Week among Adolescents Aged 12 to 17, by Gender: 2011



Difference between estimate for males and estimate for females is statistically significant at the .05 level.
Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Surveys on Drug Use and Health (NSDUHs), 2002 to 2011 (revised March 2012).

Adolescents aged 12 to 14 were more likely than those aged 15 to 17 to perceive great risk from having five or more alcoholic drinks once or twice a week (41.7 vs. 39.8 percent) and from smoking marijuana once or twice a week (54.7 vs. 35.6 percent; Figure 5). However, younger adolescents were not consistently more wary than older adolescents of the risks of illegal substances. Adolescents aged 15 to 17 were more likely than those aged 12 to 14 to perceive great risk from using cocaine once or twice a week (82.2 vs. 73.7 percent), using heroin once or twice a week (86.3 vs. 72.5 percent), and using LSD once or twice a week (75.0 vs. 65.3 percent).

Figure 5. Perception of Great Risk from Using Selected Substances Once or Twice a Week among Adolescents Aged 12 to 17, by Age Group: 2011



Difference between estimate for those aged 12 to 14 and the estimate for those aged 15 to 17 is statistically significant at the .05 level.
Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Surveys on Drug Use and Health (NSDUHs), 2002 to 2011 (revised March 2012).

DISCUSSION

As shown in this report, changes in perceived risk at the national level typically preceded or occurred simultaneously with changes in substance use rates in the Nation. In the 10-year period between 2002 and 2011, trends in the perception of great risk from alcohol use increased while binge alcohol use decreased. Rates of perception of great risk from smoking marijuana and marijuana use remained stable between 2004 and 2008; however, when rates of perception of risk decreased in 2007 through 2011, rates of smoking marijuana increased. This report also shows that perceptions of risk from using alcohol and marijuana are lower for older adolescents, which may increase their risk of use in comparison with younger adolescents. In contrast, older adolescents reported higher rates of perceived risk from using cocaine, heroin, and LSD than younger adolescents. Notably, the vast majority of adolescents, regardless of age group, perceived great risk associated with use of cocaine, heroin, and LSD.

Although this report provides details on the statistical associations between risk perception and substance use, it cannot be determined from cross-sectional data if (1) perception of great risk from using a particular drug causes youths to abstain, (2) abstaining from drug use causes youths to have perceptions of great risk from using, or (3) both. However, the findings reported here reinforce the importance of teaching youths about the dangers associated with substance use. Understanding differences in the perception of risk for varying substances may be useful to policymakers, educators, and prevention program staff in making decisions about deploying prevention messages and what segments of the youth audience they should target.

END NOTES

1. Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2012). *Monitoring the Future national survey results on drug use, 1975-2011: Volume I, secondary school students*. Ann Arbor, MI: Institute for Social Research, the University of Michigan. Retrieved from http://monitoringthefuture.org/pubs/monographs/mtf-vol1_2011.pdf
2. Palmgreen, P., & Donohew, L. (2006). Effective mass media strategies for drug abuse prevention campaigns. In Z. Sloboda & W. J. Bukoski (Eds.), *Handbook of drug abuse prevention* (pp. 27-43; Part II, Handbooks of Sociology and Social Research). New York, NY: Springer US.
3. Hawkins, J. D., Catalano, R. F., & Miller, J. Y. (1992). Risk and protective factors for alcohol and other drug problems in adolescence and early childhood: Implications for substance abuse prevention. *Psychological Bulletin*, 112(1), 64-105.
4. Bauman, K. E. (1980). *Research methods for community health and welfare: An introduction*. New York, NY: Oxford University Press.
5. Binge alcohol use is defined as drinking five or more drinks on the same occasion (i.e., at the same time or within a couple of hours of each other) on at least 1 day in the past 30 days.

SUGGESTED CITATION

Lipari, R.N. *Trends in Adolescent Substance Use and Perception of Risk from Substance Use*. The CBHSQ Report: January 3, 2013. Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Rockville, MD.

Table S1. Past Month Use of Selected Substances, by Risk Perceptions of Substance Use Behaviors among Persons Aged 12 to 17: Numbers in Thousands, Percentages, and Standard Errors of Percentages, 2002-2011

Past Month Substance Use by Perceptions of Risk	2002		2003		2004		2005		2006	
	#	% (SE)	#	% (SE)	#	% (SE)	#	% (SE)	#	% (SE)
Binge Alcohol Use in Past Month ¹										
Have Five or More Drinks Once or Twice a Week – Great Risk	535	5.7 (0.31)	535	5.6 (0.33)	639	6.7 (0.40)	497	5.2 (0.31)	599	6.1 (0.33)
Have Five or More Drinks Once or Twice a Week – Moderate/Slight/No Risk	2,100	13.8 (0.39)	2,117	13.9 (0.40)	2,142	13.8 (0.37)	2,012	13.0 (0.37)	2,017	13.2 (0.38)
Used Marijuana in Past Month										
Smoke Once or Twice a Week – Great Risk	208	1.7 (0.15)	214	1.6 (0.14)	192	1.4 (0.14)	181	1.3 (0.13)	183	1.3 (0.14)
Smoke Once or Twice a Week – Moderate/Slight/No Risk	1,812	15.3 (0.43)	1,753	15.6 (0.48)	1,711	15.2 (0.48)	1,541	13.7 (0.45)	1,506	13.1 (0.44)
Used Cocaine in Past Month										
Use Once or Twice a Week – Great Risk	57	0.3 (0.06)	55	0.3 (0.05)	36	0.2 (0.04)	47	0.2 (0.05)	38	0.2 (0.04)
Use Once or Twice a Week – Moderate/Slight/No Risk	88	1.8 (0.30)	91	1.9 (0.25)	89	1.8 (0.26)	95	1.9 (0.27)	72	1.4 (0.21)
Used Heroin in Past Month										
Use Once or Twice a Week – Great Risk	10	0.0 (0.03)	15	0.1 (0.03)	4	0.0 (0.01)	8	0.0 (0.02)	12	0.1 (0.02)
Use Once or Twice a Week – Moderate/Slight/No Risk	1	0.0 (0.03)	2	0.0 (0.04)	11	0.2 (0.10)	7	0.2 (0.06)	5	0.1 (0.05)
Used LSD in Past Month										
Use Once or Twice a Week – Great Risk	33	0.2 (0.05)	30	0.2 (0.04)	16	0.1 (0.02)	17	0.1 (0.03)	18	0.1 (0.03)
Use Once or Twice a Week – Moderate/Slight/No Risk	28	0.5 (0.16)	21	0.4 (0.10)	22	0.4 (0.12)	15	0.3 (0.09)	14	0.2 (0.07)
Past Month Substance Use by Perceptions of Risk	2007		2008		2009		2010		2011	
	#	% (SE)	#	% (SE)	#	% (SE)	#	% (SE)	#	% (SE)
Binge Alcohol Use in Past Month ¹										
Have Five or More Drinks Once or Twice a Week – Great Risk	490	5.0 (0.31)	502	5.1 (0.31)	498	5.2 (0.33)	477	4.9 (0.30)	452	4.5 (0.28)
Have Five or More Drinks Once or Twice a Week – Moderate/Slight/No Risk	1,958	12.9 (0.40)	1,704	11.5 (0.33)	1,670	11.4 (0.36)	1,427	10.0 (0.36)	1,385	9.5 (0.32)
Used Marijuana in Past Month										
Smoke Once or Twice a Week – Great Risk	203	1.5 (0.14)	194	1.5 (0.14)	124	1.0 (0.12)	158	1.4 (0.16)	87	0.8 (0.12)
Smoke Once or Twice a Week – Moderate/Slight/No Risk	1,478	13.1 (0.44)	1,470	12.7 (0.42)	1,686	13.6 (0.44)	1,641	13.0 (0.45)	1,874	13.8 (0.41)
Used Cocaine in Past Month										
Use Once or Twice a Week – Great Risk	44	0.2 (0.04)	32	0.2 (0.04)	25	0.1 (0.04)	27	0.1 (0.04)	25	0.1 (0.03)
Use Once or Twice a Week – Moderate/Slight/No Risk	60	1.2 (0.19)	66	1.3 (0.21)	45	0.9 (0.18)	31	0.6 (0.15)	40	0.8 (0.17)
Used Heroin in Past Month										
Use Once or Twice a Week – Great Risk	1	0.0 (0.00)	8	0.0 (0.03)	8	0.0 (0.02)	5	0.0 (0.01)	11	0.1 (0.04)
Use Once or Twice a Week – Moderate/Slight/No Risk	2	0.0 (0.03)	6	0.1 (0.06)	5	0.1 (0.05)	4	0.1 (0.05)	4	0.1 (0.04)
Used LSD in Past Month										
Use Once or Twice a Week – Great Risk	8	0.0 (0.02)	26	0.1 (0.04)	20	0.1 (0.03)	19	0.1 (0.03)	12	0.1 (0.03)
Use Once or Twice a Week – Moderate/Slight/No Risk	22	0.4 (0.12)	26	0.4 (0.12)	15	0.2 (0.06)	27	0.4 (0.12)	21	0.3 (0.09)

NOTE: Respondents with unknown data were excluded.

¹ Binge Alcohol Use is defined as drinking five or more drinks on the same occasion (i.e., at the same time or within a couple of hours of each other) on at least 1 day in the past 30 days.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2002-2011.

SUMMARY

Background: An adolescent's perception of the risks associated with substance use is an important determinant of whether he or she engages in substance use. **Methods:** NSDUH asks adolescents aged 12 to 17 how much people risk physical and other harm when they drink five or more alcoholic drinks once or twice a week, use marijuana once or twice a week, use cocaine once or twice a week, use LSD once or twice a week, and use heroin once or twice a week. This report presents estimates of youth aged 12 to 17 perceptions of great risk associated with substance use and past month use of associated substances. **Results:** The percentage of adolescents aged 12 to 17 who perceived great risk from having five or more alcoholic drinks once or twice a week increased from 38.2 percent in 2002 to 40.7 percent in 2011; during the same period, the rate of binge alcohol use among adolescents decreased from 10.7 to 7.4 percent. Between 2007 and 2011, the percentage of adolescents who perceived great risk from smoking marijuana once or twice a week decreased from 54.6 to 44.8 percent, and the rate of past month marijuana use among adolescents increased from 6.7 to 7.9 percent. The percentages of adolescents reporting substance use in the past month were generally lower among those who perceived great risk from using substances than among those who did not perceive great risk. **Conclusion:** Understanding differences in the perception of risk for varying substances may be useful to policymakers, educators, and prevention program staff in making decisions about deploying prevention messages and what segments of the youth audience they should target.

Key words: risk perception, substance use, adolescents, National Survey on Drug Use and Health, NSDUH

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KEYWORDS

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The Substance Abuse and Mental Health Services Administration (SAMHSA) is the agency within the U.S. Department of Health and Human Services that leads public health efforts to advance the behavioral health of the nation. SAMHSA's mission is to reduce the impact of substance abuse and mental illness on America's communities.

The National Survey on Drug Use and Health (NSDUH) is an annual survey sponsored by The Substance Abuse and Mental Health Services Administration (SAMHSA). The survey collects data by administering questionnaires to a representative sample of the population through face-to-face interviews at their place of residence.

The NSDUH Report is prepared by The Center for Behavioral Health Statistics and Quality (CBHSQ), SAMHSA, and by RTI International in Research Triangle Park, North Carolina. (RTI International is a trade name of Research Triangle Institute.)

Information on the most recent NSDUH is available in the following publication:

Center for Behavioral Health Statistics and Quality. (2012). Results from the 2011 National Survey on Drug Use and Health: Summary of national findings (HHS Publication No. SMA 12-4713, NSDUH Series H-44). Rockville, MD: Substance Abuse and Mental Health Services Administration.

Also available online: <http://www.samhsa.gov/data/>.



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